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# ANNUAL REPORT

TO THE

CITY OF BIRMINGHAM EDUCATION COMMITTEE

OF THE

# SCHOOL MEDICAL OFFICER

GEORGE A. AUDEN, M.A., M.D. (Cantab.), D.P.H. (Camb.),  
F.R.C.P. (Lond.), F.S.A. (Lond.),

INCLUDING THE REPORT ON THE  
SPECIAL SCHOOLS

BY

A. P. THOMSON, M.C., M.D., M.R.C.P.,

FOR THE

YEAR ENDED 31st DECEMBER, 1923.

*In accordance with Circulars 576 and 596  
of the Board of Education.*

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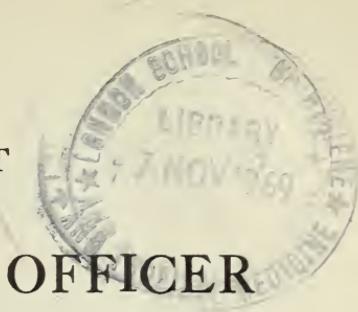
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H. W. FEATHERSTONE, M.A., M.B. } Dental Treatment.  
C. BRACEY DALE, M.R.C.S., Tonsil and Adenoid Clinic.



## ANNUAL REPORT

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# SCHOOL MEDICAL OFFICER

GEORGE A. AUDEN, M.A., M.D. (Cantab.), D.P.H. (Camb.),  
F.R.C.P. (Lond.).

For the Year ended 31st December, 1923.

## ELEMENTARY, SECONDARY & NURSERY SCHOOLS.

### INTRODUCTION.

The year under review in this, the Sixteenth Annual Report of the School Medical Department, has seen very little administrative change. On September 3rd a Dental Department in the Alcester Street Clinic was opened with Mr. E. Dickson, L.D.S., in charge. There have been no changes in the personnel of the Medical or Dental Officers. Nurse Greaves, from the Greet Clinic, and Nurse Cooper, from the Floodgate Street Clinic, resigned their appointments, their places being filled by Nurse Marsh and Nurse Barton. Unfortunately, the Committee of the Dental Hospital found themselves unable to continue the arrangement whereby a number of older children were treated daily at that Institution. The arrangement accordingly terminated on the 1st July last.

The total number of children examined in the Elementary Schools was 50,929, as against 47,886 in the previous year. There were, moreover, 26,950 examined in the School Clinics, making a grand total of 77,879 children who came under the examination of the Assistant School Medical Officers. These figures are considerably greater than those reached in any previous year. The number of individual children discovered to have defects which required treatment or observation was 42,287. These figures are set out in detail in the Tables at the end of this Report.

A similar growth of the work is seen in the returns from the Dental Clinics. 54,639 children were inspected by the Dental Officers in the Schools, and 26,578 actually received treatment. This gives 2,449 more children inspected, and 2,373 more children treated, than in the previous year.

To these figures must be added the 3,080 children medically examined in the Secondary Schools, the 890 children examined for newspaper delivery, etc., and the 300 children referred to me for special examination and report.

It is not, however, from the mere volume of the work done so much as from the histories of individual children that the real value of the School Medical Service, and its relationship with other ameliorative agencies, can best be envisaged. A few examples may be given as types of the close inter-relationship which exists.

Case I. : A. B., a delicate and undersized little lad, of seven years of age, backward and listless.

1917-18.—Medical inspection revealed evidence of Tuberculosis, for which he was duly treated.

1918-19.—Much absence owing to illness. Tonsils and Adenoids have been removed at the Handsworth Clinic. Little progress in school work, which is largely due to his frequent and prolonged absences.

1919-20.—Treated in Sanatorium. On return to School shows marked improvement physically and mentally.

1920-21.—Under constant supervision by Assistant School Medical Officer. Shows a growing interest in games and athletics. Class-work well advanced.

1921-22.—Kept under medical supervision. Attendances at School now regular.

1923.—Head boy in School. Captain of the School Cricket Team, good football player and swimmer, and appears to have shaken off the delicacy of his earlier childhood, and bids fair to become a robust and active man.

Case II. : C. D., the fifth of a family of six children. His father is suffering from Phthisis, and his mother is an invalid confined to bed. An elder sister keeps the house. The youngest is an imbecile child of six years. The home is decent and clean, and the family is doing its best under very difficult conditions and great stress of poverty.

February, 1919.—Charles, age seven, is examined by the Assistant School Medical Officer, and found to show subnormal nutrition with some enlargement of tonsils and adenoids, and with defective teeth. There is a history that he has been treated at Yardley Sanatorium. At the next routine examination he is one month under nine years of age, but he weighs only 3st. 5lbs. He has only gained seven pounds in  $2\frac{1}{2}$  years. He is noted as thin and suffering from Bronchitis. His teeth have been treated, and his tonsils and adenoids removed, at the School Clinic in the past year. He is examined again six months later when his weight is found to be 3st.  $10\frac{1}{2}$  lbs. His lungs still show evidence of chronic Bronchitis, but the Tuberculosis Officer to whom he is referred reports that there is no evidence of Tuberculosis. Arrangements are made for him to receive a pint of milk daily from the Poor Law Guardians. This is repeated at intervals during the subsequent two years, and the boy continues to attend the School Clinic fortnightly for observation. In January, 1923, owing to the boy's miserable appearance, the School Nurse visits his home and finds the stress of poverty pressing very heavily on the family. A grant of £3 is made by a private charity, which is spent on clothing, etc., by the School Nurse, together with Charles' sister. The mother, still confined to bed, sews the material which his sister has cut out. An attempt is now made to get him into a Convalescent Home, unfortunately, without success, but the grant of milk is resumed and continued for several months.

At the time of writing these notes, Charles is in Standard V., age 11  $\frac{5}{12}$ ths, he is steadily improving, though slowly, and taking an active part in the social life of his School. His general condition bids fair to repay the amount of time and attention which has been devoted to him, and gives a reasonable prospect of his being able, though not robust, to take his place in industry. In due course he will come under the After-Care Committee, when every effort will be made to find some form of employment for which his physical capacities are suited.

Case III. : E. F. lives in a dreary slum street, with his decrepit grandmother, whose bed he shares. She is dirty and unkempt and quite unsuitable for the charge, but not deliberately cruel. He is illegitimate and his mother is in the Asylum.

April, 1916—Weight 2st. 3lbs. (age 6  $\frac{2}{12}$ ths), clothing poor, body fleamarked, deaf, and with evidence of adenoids. Operation advised but refused. School Nurse called at the home to urge the importance of the operation, but this was again refused, though assent was given for Dental treatment, which was subsequently carried out at the School Clinic; and again two years later.

May, 1920.—Age 11. He has only gained 20lbs. in five years. Body dirty, fleamarked and verminous. Very backward, with defective speech. Tonsils very large. Grandmother now gives consent and the operation is duly performed at the Handsworth Clinic.

February, 1923.—Boy is still verminous and fleabitten. Reported to the Health Department. In due course further action is taken and a special enquiry officer of the Attendance Department pays a visit to the home. This is followed by an offer of the Middlemore Homes to take charge of the boy, but without result, as neither the grandmother nor the boy will accept the offer.

November, 1923.—He is now beginning to awake to a sense of self-respect. He is clean and tidy, with good clothes and boots which have been supplied by the *Birmingham Mail* Fund. His school work has greatly improved, and he is reading books obtained from the School library. He is now on the threshold of industrial life, and has a chance of a job on leaving School a month hence, and his outlook on life gives hopes that he will be able to raise himself above the sordid environment in which his childhood has been passed. In this aspiration the After-Care Committee will watch and aid him through the critical years of adolescence.

Cases such as these afford an eloquent refutation of the statement sometimes made that the School Medical Service is solely concerned with the tabulation of statistics, and has little or none of that human interest which gives the true value to all forms of social service.

It would be helpful, were it possible, to include in this survey all the treatment obtained through agencies other than the School Medical Service, *i.e.*, through private practitioners, hospitals, dispensaries, and the numerous voluntary agencies for the welfare of children. The multiplicity of agencies renders this impossible, though the total volume of ameliorative work to safeguard the physical health and future efficiency of the child population is enormous.

The Children's Country Holiday Society has again given valuable aid in this direction. Originally begun as an agency to provide a holiday in the country for children otherwise unable to obtain it, the pressure upon the resources of the Society has compelled a selection of those children in

most urgent need of change of air, and the choice is now governed by the need of convalescence after illness or of open-air treatment for anaemia and debility. The following numbers were dealt with on recommendation from various sources :—

Class 1.	From Head Teachers (poor health) ...	... ...	544	2 weeks.
	„ Jewish Branch (poor health) ...	... ...	49	2 weeks.
2.	„ School Medical Department (convalescence) .		128	4 weeks or more.
3.	„ <i>Birmingham Mail</i> (War Orphans, delicate and needy) ...	... ...	266	2 weeks.
4.	„ <i>Weekly Post</i> (Delicate and Needy) ...	... ...	278	2 weeks.
			Total ...	1,265

During the year, through the energy of Mr. Frank Matthews, as was foreshadowed in the Report for 1922, a new Society has been formed for the care of invalid children, especially those suffering from Rheumatism, Chorea, and Heart Disease. Such children require very prolonged treatment in suitable surroundings, and the results for the first six months are remarkable. Ten beds are reserved in the Cottage Hospital at Much Wenlock, nine of which were filled by cases sent to the Society by the School Medical Staff. In addition, the Society has sent thirty cases to Moseley Hall. Three "pre-tuberculous" children and two Chorea cases have been boarded out for four months. Four "delicate" children have been sent to the sea for three months, and several children have gone to Convalescent Homes. These activities, if they receive adequate financial support, will prove one of the most valuable adjuncts for the prevention of that most irreparable physical handicap, organic disease of the heart.

The Cripple Union has continued to maintain its close association with the School Medical Department, especially in connection with the Remedial Exercises Clinic. Quite a number of cases of the more severe forms of crippling which have been met with have been taken under treatment and supervision by the Union. The Secretary reports that 368 children were treated in the Out-patient Department, and that 290 children received treatment at the Woodlands Hospital and the Forelands Convalescent School.

Mention may also be made of the increased use of the Hospital accommodation at Dudley Road and Selly Oak. Dr. F. Ellis, the Principal Medical Officer, reports that, during the year, 1,734 Birmingham children above the age of three were admitted to these Institutions, a large number of them being acute disease requiring operation or treatment, or injuries.

Some reflection of the prolonged trade depression with its attendant poverty might be expected in the nutrition and growth of the children. Nutrition, however, is a highly complex problem, and it is difficult to form any really valuable opinion from the findings of medical inspection. Enquiries at the end of the year amongst various head teachers in the poorest districts revealed a considerable difference of opinion. Some found no marked change, others felt that there was a definite reduction in the physical and mental condition, and especially in that responsiveness and spontaneity which is characteristic of the healthy child. It may quite possibly be that the unusual wet and dismal October to December and the long deferred recovery of trade, with the prospect of yet another winter of unemployment and poverty, have brought a gloom upon the homes which has reacted adversely upon the usually buoyant spirits of the children.

But over and above these causes of depression looms larger the malign influence of the housing conditions under which many families are constrained to exist; conditions which cannot fail to nullify much of the effort that is being made to place the children on a higher plane of health, and to bring in their wake a heritage of troubles in future years.

### SUMMARY OF WORK.

The following table summarises the work done :—

Number of children medically examined in schools	...	50,929
" " " in Clinics	...	26,950
" examinations in schools for verminous conditions	...	245,704
" children treated at Clinics (minor ailments)	...	18,702
" " " Dental Clinics	...	26,578
" " " Tonsil Clinic	...	1,418
" " " X-Ray Clinic	...	514
" " provided with spectacles	...	3,460
" " bathed for scabies	...	307
" " examined at Remard Home	...	21
" " " for theatrical employment	...	11
" newspaper and milk boys examined	...	890

### DENTAL SERVICE.

The arrangement with the Dental Hospital whereby a number of elder children were treated daily was terminated in July. As, however, a new Dental Department was opened on the 3rd September in the Alcester Street Clinic, there was no actual reduction in the number of children treated. As has been already mentioned in the opening remarks of this Report, the total amount of work done by the Dental Surgeons exceeds that of any previous year.

In April, 1923, Mrs. Davies, formerly Dental Nurse, having become by examination a Registered Dentist, was appointed an Assistant School Dental Officer.

74·4 per cent. of those examined were found in need of treatment.

26,578 children actually received treatment, making 31,044 attendances at the various Clinics, but these include children sent up to the Clinics from other sources than the Dental Inspections in the Schools. The statistics of the work done will be found in Table IV.

The evil effects of septic conditions in the mouth, both immediate and remote, cannot be over-emphasised. Failure of normal growth and physical development is but one of the commoner manifestations. The extraordinary improvement which follows the cleaning up of the mouth and nasopharynx in patients in mental hospitals, which is demonstrated, for example, at Hollymoor, is a testimony of the malign influence exerted by chronic sepsis in the production of ill-health and abnormal mental states. It is not suggested that septic teeth are the prime cause of such mental disorder, but that they certainly are of profound importance in determining the downward movement in those whose mental equilibrium is trembling in the balance. Though the last few years have shown a remarkable improvement in the care of the teeth, there is still much need of teaching, and of the provision of opportunities for continued dental treatment.

Regulation of the growth and shape of the jaws is of great intrinsic importance, but requires more time and accommodation than could be devoted to it without detriment to the other work of the Dental Clinics. Much regulation work is carried out by the Dental Hospital, which has on its register more than 400 children undergoing orthodontic treatment.

### PROVISION OF SPECTACLES.

During the year there were 3,460 pairs of spectacles provided through the Medical Department. Further, a considerable number of children, especially those found to show squint, attended periodically for examination. Every attempt is made to secure treatment of children suffering from squint as early as possible.

Mr. Beatson Hird, F.R.C.S., Ophthalmic Surgeon, reports as follows :—

" The total number of new cases seen by me was 366, and of these 290 were found to require glasses. The remaining 76 were suffering from other affections requiring operative and medical treatment or special methods of education. Many of these were transferred to the Birmingham Eye Hospital under my care.

" During the past year I saw 605 children who had been seen by me previously, including those from the Partially-Blind Schools. These children for the most part required re-testing for glasses, but some were suffering from myopia and squint, and were seen to note the effects of treatment.

" The analysis of the new cases for whom glasses were prescribed in 1923, works out as follows :—

(1) Hypermetropia (long sight)	...	...	...	...	69	or	23·8%
(2) Hypermetropic astigmatism	...	...	...	...	129	or	44·4%
Total long-sight cases	...	...	...	...	198	or	68·2%

" Among these were 92 children suffering from squint and forming 32 per cent. of the cases requiring spectacles, the majority of squinting children being referred to me. All suitable cases were instructed in the methods of education of the squinting eye, and suitable cases for operation were transferred under my care at the Eye Hospital.

(3) Myopia (short sight)	...	...	...	...	...	34	or	11·7%
(4) Myopic astigmatism	...	...	...	...	...	42	or	14·4%
(5) Mixed astigmatism	...	...	...	...	...	16	or	5·5%
Total short-sight cases	...	...	...	...	...	92	or	31·6%

" Among the new cases 17 were suffering from scars on the cornea, more or less impairing vision. These amounted to 4·6 per cent. of the total new cases seen. The analysis of these cases showed the causes to be as follows :—

Interstitial keratitis (hereditary syphilis)	...	...	...	...	...	4	cases.
Ophthalmia neonatorum	...	...	...	...	...	2	"
Corneal ulcers	...	...	...	...	...	9	"
Injuries	...	...	...	...	...	2	"

" Many of these cases, as well as some bad myopes, were transferred to the Partially-Blind Schools.

" Treatment was undertaken in 12 cases at the Clinic.

" There was only one case of ciliary spasm.

" The total number of children seen by me at the Great Charles Street Clinic was 971, and the total number of spectacles prescribed by me 584. Of these 294 were old cases.

" The Partially-Blind Schools at Whitehead Road and Edgbaston were inspected every four months."

### RINGWORM.

In 1922, it will be remembered, two " Dreadnought " Interrupters were fitted to replace the unsatisfactory type which had been working since the opening of the X-ray Clinic. This installation, coupled with the new type of English-made tube, has proved highly satisfactory and economical, both in time and monetary outlay. More cases could be dealt with each week, and it thus allowed a more intensive campaign against Ringworm. This is reflected in the number of children who received treatment during 1923, viz., 514. It became increasingly difficult to collect sufficient cases to fill all the sessions, and, accordingly, from the 1st October, 1923, the attendances of Dr. Russell Green were reduced from five to three times in the week. All cases are seen prior to treatment by Dr. Russell Green, who examined 635 children presented to him. This figure also includes children suffering from other skin complaints. There is now but little difficulty in obtaining the parental consent for X-ray treatment. What is the actual number of Ringworm cases in the School population is an exceedingly difficult question to determine, but a record of all the cases found by the Assistant School Medical Officers and School Nurses over a period of three months, and known to be suffering on a given day at the beginning of the year 1924, gives a total of 127. From these figures, which have been arrived at after systematic search, it may safely be assumed that there is a very marked decrease in the number of children infected compared with the figures of a few years ago, and that the gradual conquest of this parasitic infection is now well in hand.

In order to protect the Nurse who is engaged continuously in working the X-ray installation, and as a result of the inspection of Dr. H. B. Keene, of the Physics Department, Birmingham University, the apparatus containing the tubes has been lined with the equivalent of 2 mm. of lead, in accordance with the suggestion of the X-rays and Radium Protection Committee.

### TONSILS AND ADENOIDS.

The total number of operations for the removal of tonsils and adenoids at the Handsworth Clinic was 1,418. The Clinic has now been in existence for more than ten years, having been opened on the 3rd October, 1913. During this period to the end of the year, 12,890 children have received operative treatment. The confidence which the success of the Clinic has achieved is reflected in the number of children referred by private practitioners to the Medical Department with a view to operation. There is still a regrettable reluctance on the part of the parents to bring their children to the Remedial Exercises Clinic for special breathing exercises after operation. This is an important part of the treatment, but only 57 per cent. of the children were brought up for this instruction.

### OTORRHœA.

Twelve months have now elapsed since the consulting Aural Surgeon, Mr. F. B. Gilhespy, M.R.C.S., began the examination of children suffering from chronic ear and nose affections, other than tonsils and adenoids. In the light of the experience thus gained it is now possible to pass in review some of the more salient facts and to estimate the direction in which future developments may be made.

The Clinic has been held on an average once in three weeks, and a total of 300 cases (boys 149, girls 151) have been examined. Though in the circumstances Mr. Gilhespy's services are mainly of an advisory character, a certain number of smaller operations, such as the removal of polypi from the ears, have been carried out at the Clinic, but the conditions under which the Clinic is carried out naturally do not lend themselves to the treatment of the much larger number of cases which require more extensive operative interference or an anaesthetic. These cases, and especially those suffering from chronic ear discharge which do not yield to simple treatment, and infection of the mastoid, form the real crux of the matter.

The Voluntary Hospitals of Birmingham serve a much wider area than the City itself, and there is always considerable pressure on the bed accommodation for both children and adults. This necessitates a long waiting list, which, combined with the difficulty of obtaining the necessary notes, forms a serious impediment to satisfactory treatment. The result is that a very small proportion of the children who suffer from chronic ear discharge receives treatment other than such treatment as can be given in the School Clinics. As the condition is not one which undergoes spontaneous cure, there is a gradual accumulation of children and young adults who suffer from this condition with all its attendant disabilities and danger. In this connection it may be remarked that in the last six years amongst the deaths of children from 6 to 15 years of age in the City, 77 have been due to meningitis (other than tuberculous meningitis). As middle ear disease is the most frequent cause of meningitis, it is not too much to say that a considerable number of these deaths were a sequel of chronic disease of the middle ear and mastoid. The problem thus, if looked at from the wider point of view of the health of the community as a whole, is one which merits earnest consideration, and in view of the financial position of the Voluntary Hospitals, it does not seem likely that they will be in a position to extend their present activities to meet this demand.

The question of treatment is twofold, viz., preventive and curative. Although a very considerable number of cases of chronic otorrhœa can be traced back to an attack of scarlet fever, yet in Birmingham measles rivals scarlet fever in the production of this ear condition. From an analysis of 100 consecutive cases of otorrhœa seen by Mr. Gilhespy at the Aural Clinic, it has been found that in 40 per cent. the initial cause of the discharge could be traced to an attack of measles or scarlet fever in almost equal proportions. In Leicester and in Birmingham the incidence of chronic otorrhœa appears to be identical, viz., 1.2 per cent. of the average attendance. It is not possible, without a special examination of a long series of cases, to determine the precise proportion in which operation is required.

Remarkable results are now being obtained at the Little Bromwich Hospital by the early operative treatment by Mr. Gilhespy of cases of ear discharge accompanying scarlet fever, and it may be confidently

expected that in future years there will be a considerable reduction in the number of cases which can be traced to scarlet fever. No such diminution can be expected in the condition of post-measles ear discharge, because so few cases of measles receive hospital treatment. (It may be noted that in Austria, where measles is much more generally treated in hospital, the number of cases of chronic otorrhœa amongst school children is comparatively small).

Furthermore, the greatest incidence of measles is in the first five years of life, *i.e.*, before they come under the supervision of the Education Committee. A proportion of our school children are thus gravely incapacitated before they start school life. In the majority of these post-scarlatinal or post-morbillic cases the membrane of the ear is found to be largely destroyed or polypi are found to be present. In a considerable proportion of these operative treatment is indicated. So much for prevention.

In a discussion of the curative aspect of the question, it may be remarked that an active and systematic attack on the problem will effect a reduction of the present accumulation of cases who are in clear need of operation, and that when this accumulation has been dealt with, combined with the preventive measures in the scarlatinal cases, the problem will be one of the treatment of the much reduced number of cases as they arise. Incidentally, an active campaign will probably produce a definite reduction in the number of children who must be taught in Schools for the Deaf.

The fact that about 1,600 children are known to be suffering from chronic otorrhœa shows the extent of the problem. If the question is to be dealt with in a satisfactory manner, special residential accommodation will have to be provided, as the children operated upon for mastoid operation must remain in bed for from 10 days to a fortnight.

### NURSERY SCHOOLS.

#### 1.—*Selly Oak.*

Additional accommodation has been provided, and the School has now a total accommodation for 50 children. It has been under the inspection of Dr. J. M. Alexander, Assistant School Medical Officer, who visits the School every month and examines all entrants, in addition to a half-yearly examination of all the children in attendance. Arrangements have been made for the School Dental Surgeon at Fashoda Road Clinic to inspect the teeth of the children.

Of 61 infants examined at the half-yearly medical inspections,

- 3 had external eye-disease;
- 2 had ear-disease;
- 2 had bronchitis;
- 3 had enlarged tonsils, all of whom received operative treatment before the next examination.

In the district in which the School is situate there is much overcrowding and poverty. Out of 53 children admitted during the year, 24 were living in two-roomed homes and five in one-room homes. In two of the latter cases there were twelve other children and six adults in the house.

This overcrowding shows itself in the incidence of infectious disease, both prior to and subsequent to admission. Thus 60 per cent. had already contracted one or more infectious diseases before admission, *i.e.*,

17 had already suffered from Measles;

4 „ „ „ „ Whooping Cough;

6 „ „ „ „ Measles and Whooping Cough;

4 „ „ „ „ Measles and Chicken-pox;

1 „ „ „ „ Measles and Scarlet-fever;

1 „ „ „ „ Measles, Scarlet-fever and

Chicken-pox.

## 2.—Summer Lane.

A weekly visit is paid by me, when all entrants and children requiring attention are seen and examined. Mrs. Davies, Assistant School Dentist, has also inspected the children's teeth, and those who have required attention have been treated by her at the Great Charles Street Clinic. No definite epidemics have occurred, but infectious disease has claimed a certain number of children:—Measles 8, Whooping Cough 13, Chicken-pox 2, Scarlet Fever 1. The same method of selection for admission has been followed as in previous years, *i.e.*, the evidence of an earnest endeavour on the part of the parents, despite poverty and unfavourable circumstances, to co-operate with the school staff in the welfare of their children. The following examples are typical:—

A.B. Father out of work; family of 8 living in one room.

C.D. Family of 5 living in lodgings.

E.F. Illegitimate; deserted at 5 months by mother; brought up by aged grandmother.

G.H. Family of 6 (4 under 5 years of age) living in 2 rooms; deserted by father.

## REMEDIAL EXERCISES CLINIC.

More children have passed through the Clinic than in previous years. It is gratifying to note that more children are now being recommended from hospitals and medical practitioners for treatment:—

### LIST OF CASES TREATED DURING 1923.

		Admitted.	Discharged.
Spinal Curvature and Postural Deformities	...	55	46
Muscular Debility	...	23	11
Deformities of feet	...	13	13
Paralyses	...	14	22
Chest Deformities and Asthma	...	6	5
Arm and Leg Injuries	...	1	2
Torticollis	...	1	3
Rickets	...	1	1
<hr/>			
Totals	...	114	103
<hr/>			

A number of these have been examined by Mr. Naughton Dunn, M.B., and for those in which operative treatment has been indicated, arrangements have been made chiefly through the Cripples' Union.

810 children have attended for breathing exercises after the removal of tonsils and adenoids.

### EPILEPTIC REGISTER.

The system of periodic examinations and a special schedule for all children who are reported to be suffering from epileptic attacks remains unchanged. At the beginning of the year there were 112 names on the register; 30 names were removed and 28 were added, so that there has been practically no change in the number of children kept under observation.

### REMAND HOME.

During the year I examined 23 children at the Remand Home, 21 of whom were on committal to an Industrial School. As this examination is made in order to ascertain whether the child is "sound in health, sane in mind, and fit to undergo Industrial training," it necessarily entails an investigation into the intelligence and general mental capacity. It would be more logical, and of more value, if such an examination were made prior to such committal, so that the evidence thus obtained would be available for the Magistrates sitting in the Children's Court. It is desirable that such an examination should be made, not in the precincts of the Court, but in an Institution, and a remand for seven days for this purpose would be an easy procedure. We are now beginning to understand that conduct is not mere chance or haphazard, but is determined by definite antecedent causes. Many factors are assigned as "causes" of delinquencies which are in reality only predisposing factors. The true cause, which is always directly due to the "mental make-up" of the individual, can only be found by an intensive and systematic investigation. The factors which underlie those dis-social actions which we designate "delinquencies" can be traced and investigated. Only when the cause is known is it possible to deal with the result in a satisfactory manner. Viewed in this light, juvenile delinquency is not a problem *sui generis*, but one single aspect of the much larger problem of adolescent development, which includes amongst others the questions of the neglected or ill-treated child, the child of neuropathic or psychopathic inheritance, and that of the physically and mentally defective children.

Though there may be diversity of thought in certain theoretical aspects of child psychology, yet there is a fundamental agreement amongst all competent observers upon the broad basis of the facts. It is therefore equally important for the individual child and for the community that every child brought before the Children's Court for any but trivial infringements of the bye-laws, etc., should undergo a systematic psychological and physical examination—for the individual child, because he is at the parting of the ways, where a slight bias will turn his steps for good or ill; for the community, because it is an acknowledged fact that by far the greater number of "habitual criminals" begin their dis-social careers in adolescence or earlier. It must be remembered that the "first conviction" is but a milestone along the path of conduct, and has often been preceded by other delinquencies which have not received official recognition.

The causes which have brought him to this point must be traced to a much earlier period of his life's history, and it is in childhood that the seeds are sown which later on yield the harvest of delinquency and crime.

As regards procedure, there is no real inherent difficulty, for if the child is of school age he may be regarded as a "special" as distinct from a "routine" case, for whom an examination by the School Medical

Officer into his physical and mental condition is desirable. Moreover, the commission of delinquent acts which have brought him within the scope of the Children's Court is presumptive evidence that he differs in the working of his mental processes from the mass of his more normally-acting comrades. He therefore comes within the scope of the regulations made under the Mental Deficiency Act, 1913, whereby the School Medical Officer is, by virtue of his position, an examining officer under the Act.

A certain number of children are examined by me from the Children's Court in this way, but it is clear that much greater use of the opportunities could be made than is the case at present. This need for some form of Clinic has been well exemplified by the very considerable number of children who exhibit a marked tendency to stealing, and other misdemeanors, as the result of an attack of encephalitis lethargica. Such children are not feeble-minded in the ordinary acceptance of the term, and it is clear that they require special consideration and treatment. It may be added that in other countries, e.g., in the United States, a psychological clinic is definitely attached to the Children's Court, and in Vienna (where I was able to spend two days in the Children's Court, in April last), not only is every child examined by the psychologist attached to the Court, but many cases never come actually into Court, being dealt with directly by the psychologist who has a wing, with 20 beds, at his disposal at the great University-Clinic, for the better observation of their mental and bodily condition. It would seem but fitting that Birmingham, which has taken so prominent a part in the advances towards a fuller examination of the adult offender, should not be behindhand in dealing with the still more important problem of juvenile delinquency.

#### FEEDING OF NECESSitous CHILDREN.

The Feeding Centres are periodically visited by members of the Medical Staff. The meal is given as a two-course dinner on every day of the week.

		1922.	1923.
Total number of meals ...	...	671,627	270,849
Daily average, 1st January	...	3,492	1,154
„ „ 1st July	...	971	537
„ „ 31st December	...	1,154	759
Total number of children who received meals	...	8,263	2,409

The following is the scheme carried out under the supervision of the Chief Superintendent of School Attendance Officers :—

Tickets for meals are supplied to children on recommendation being made by Head Teachers, the School Medical Officer, or the Assistant School Medical Officers. Except in cases marked "urgent," meals are not granted until careful investigation has been made by the School Attendance Officers into the circumstances of the family. In "urgent" cases temporary tickets are issued for a few days to cover the period of investigation.

Free meals are granted when, in the opinion of the School Attendance Sub-Committee, the income of the family is such that it is impossible for the parent to provide sufficient suitable food to enable the children to take full advantage of the education provided for them.

When granting free meals the whole of the family income, from all sources, is taken into consideration, and wherever possible the information given to the School Attendance Officer is verified by enquiry, per letter, to the employers. All meals granted are immediately reported to the Birmingham Mutual Registration of Assistance Committee and information is received from that body of all assistance given by other relief agencies.

When free meals have been granted tickets are duly issued for four weeks, and before the expiration of this period a further enquiry is made as to the family income, and, if necessary, tickets for free meals for a further four weeks are issued.

Meals are provided at three types of Feeding Centres :—

1. In kitchens which have been equipped and staffed by the Committee.
2. At Contract Centres, where meals are provided by School Caretakers, Restaurant and Eating-house Keepers.
3. At Special Schools.

The Education Committee's kitchens, with one exception, are located at Council Elementary Schools, where the Committee have constructed and equipped sheds for the purpose. The exception is a case where a conveniently situated building, belonging to the Committee, not in use as an Elementary School, has been so used. At these Centres the meals, which are according to a menu drawn up by the School Medical Officer and approved by the Education Committee, are served in one or more of the school rooms.

Contract Centres are arranged only where the number of children to be fed in a locality is so small or such special circumstances exist that the erection and equipment of a kitchen is not justified. Arrangements are made for a suitable meal to be provided by a school caretaker or the proprietor of a restaurant or eating-house, for which the Education Committee pay a fixed price per meal.

So far as the food supplied is concerned it is ample, well-cooked and appetising. The lack of fresh vegetables, with the vitamines contained therein, to some extent deprives it of one of the most essential components necessary for the nutrition of a growing child.

#### SECONDARY SCHOOLS.

The opening of the Moseley Council Secondary School (Boys) in September last has added to the number of pupils to be examined. The work has been carried out systematically, and 3,080 pupils have been examined, being 282 more than in 1922. The proportion of pupils requiring treatment or observation (excluding dental treatment) for defects found is 27.2. Though large, this proportion compares very favourably with that which is found in the Elementary Schools. With the exception of defective vision, the incidence of defects is comparatively trifling. A number of minor departures from the normal, e.g., postural deformities, early spinal curvature, round shoulders, and the like, are more or less of a temporary character, and should undergo spontaneous cure from participation in swimming, games and physical exercises.

**Dr. Morley reports :—**

“ It is among the new boys that defects are most commonly found, defective vision being the most common abnormality needing treatment. It is not uncommon to discover a boy with marked short sight at the age of eleven who at the age of eight is recorded as having normal vision when he was examined in the mid-group at an Elementary School. Enlarged tonsils and adenoids are not common, for the parents who consider their children sufficiently to enable them to pass on to a Secondary School have had these conditions treated at the Elementary Schools when it has been advised. Apropos of this it is interesting to note that in the case of the 99 new boys attending the Council Secondary School in Wake Green Road, at least 29 had had their tonsils and adenoids treated by operation before admission. Otorrhoea, or the history of it, among these boys appears to be below the average, and the above would favour the view that with careful parents prevention of this most serious condition may be largely attained, a prevention which, difficult as it may be, is not only better but easier indeed than cure. It is encouraging to find that advice given to these is valued and is usually acted upon.

“ The parents of the new boys have been present in gratifying numbers, and on at least one occasion 100 per cent. were present at a morning's examination.

“ With the exception of a few cases where for some reason or other they had been under constant medical supervision at home, none of the boys were withdrawn from the medical inspection.”

**PUPIL TEACHER CENTRE.**

**Dr. B. S. Alexander reports :—**

“ I visited the Pupil Teacher Centre on seven occasions during 1923. During the course of these visits I examined 150 girls, and, in addition, made 107 re-examinations of girls with various types of defects, or who, for one reason or another, needed to be kept under observation. The students examined are prospective teachers, destined ultimately to play their part in the welfare—mental and physical—of the child life of the country. If in later years they are to carry out effectively their obligations to their pupils with regard to health and hygiene, it is essential that no time should be lost in discovering and rectifying defects in their own physique. For this reason, apart from the fact that their future career will impose upon them a certain measure of physical and nervous strain, the examinations of these students were thorough and searching.

The following defects were recorded :—

				For Treatment.	For Observation.
Malnutrition	...	...	...	...	2
Skin diseases	...	...	...	4	4
Defective vision	...	...	...	22	55
Ear disease	...	...	...	—	1
Enlarged tonsils	...	...	...	1	10
Adenoids	...	...	...	1	1
Organic heart disease	...	...	...	2	2
Functional heart disease	...	...	...	2	1
Anaemia	...	...	...	4	4
Deformities	...	...	...	18	19
Other defects	...	...	...	9	17
Number of individual students requiring attention to defects				...	54

" It will be seen that defective vision again predominates, being rather a greater proportion than last year—roughly 14 per cent. more. One has to remember the amount of study and close application to books which the career of these students involves, and in this may lie the explanation, as was suggested last year. At the same time one must not forget that it may be unwise to allow a student with marked progressive myopia to continue her studies. Twenty-two of the students with defective vision were recorded as being in need of treatment, and the remainder were to be kept under observation. Anæmia shows a decrease as compared with last year, and this is a cause for satisfaction. Special remedial exercises were suggested for those students suffering from minor deformities—spinal curvature, flat foot, and similar conditions. These were under the direct supervision of the Teacher of physical exercises. Thirty-four girls were in need of dental treatment.

" I very much regret that, at the end of April, the Pupil Teacher Centre will lose the services of Miss Bowler. She has been present at the inspection of every student I have examined, and nothing escapes her notice. Moreover, no stone was left unturned until the appropriate treatment was secured for any defects which were found. To this is owing the great success of the work of the Centre."

#### MEDICAL EXAMINATION OF INTENDING TEACHERS.

In addition to the general examination carried out by Dr. Bethia S. Alexander, Assistant School Medical Officer, at the Pupil Teacher Centre, I have examined 258 intending teachers with special reference to the determination of their physical fitness and suitability for the teaching profession, viz. :—

						Boys.	Girls.
Bursars	...	...	...	...	...	19	61
Student Teachers	...	...	...	...	...	26	89
Pupil Teachers	...	...	...	...	...	—	48
Preparatory Class Pupils	...	...	...	...	...	—	15
						45	213
						—	—

#### INFECTIOUS DISEASE.

The following table shows the incidence of the principal notifiable infectious diseases (all ages). (Supplied by Health Department) :—

						1922	1923
Scarlet Fever	...	...	...	...	...	3,350	2,620
Diphtheria	...	...	...	...	...	1,285	1,537
Cerebro-spinal Meningitis	...	...	...	...	...	18	4
Anterior Poliomyelitis	...	...	...	...	...	6	33
Encephalitis Lethargica	...	...	...	...	...	12	29
Ophthalmia Neonatorum	...	...	...	...	...	484	435
Pneumonia	...	...	...	...	...	2,166	2,119

Diphtheria has once again shown a very heavy incidence, and was the cause of a larger number of deaths (60) in children of school age than any other single cause. In the " Shick Test " now being extensively applied in various countries, we possess a most important instrument in the ascertainment of those children who are susceptible to the disease. By subsequent inoculation of these children the spread of the infection in classes could be prevented and many lives saved thereby.

Dr. Duguid has carried out an investigation into the incidence of common infectious disease of childhood in the Gem Street area in which he works. Altogether the histories of 6,000 school children were obtained and examined with special reference to measles, whooping cough, German measles, chicken pox, mumps and scarlet fever. Diphtheria was omitted because the total incidence and age incidence are much more affected by preventive measures than the other conditions. The history of each child was obtained from its mother.

Only 3.58 per cent. of children from 12 to 14 years of age had escaped all the zymotic diseases. This condition of apparent natural immunity or increased resistance to the infectious diseases proved to be very commonly familial. Almost one-half of these children had one or more older brothers or sisters who had also escaped all the zymotic diseases. In some families this was most striking—several families of 7 to 9 children having passed through childhood without one of them having contracted any of the diseases. In several of these cases there was some evidence which pointed to the immunity having been inherited from the mother.

With regard to the sequelæ of the diseases, there appeared to be a decided tendency for children to suffer two or more of the diseases in rapid succession or even at the same time. This association was most marked in the case of measles and whooping cough. Thus, out of 2,970 children who suffered both measles and whooping cough, in 1,130 the interval between the diseases was not more than 6 months—in 510 of these the diseases ran continuously on without any distinct interval between them, and in 433 the interval was less than three months. Amongst these cases the sequence of measles followed by whooping cough occurred  $2\frac{1}{2}$  times as often as the inverse sequence. Measles is the zymotic which was most frequently followed by another. In the case of the others, although the association was less obvious, it was undoubtedly present, but in the case of mumps the only zymotic prone to follow is chicken pox. Apparently, with the partial exception of mumps, an attack of one zymotic leaves the body in a state of increased susceptibility to the other zymotic diseases.

Second attacks of measles were found to be much commoner than is usually reported. No fewer than 5 per cent. of the school children were believed to have had more than one attack of measles. This condition, moreover, is very commonly familial. The percentages of children who suffered second attacks of the other zymotics were relatively much smaller—whooping cough 0.5 per cent., mumps 0.4 per cent., scarlet fever 0.25 per cent., chicken pox 0.23 per cent., German measles 0.13 per cent.

It has frequently been remarked that very young children are immune to measles, and my figures bear out that their resistance is very high. Only 30 of the children had contracted measles within the first three months of life, and 61 contracted it between the third or sixth month, whereas during the second six months of life 438 children contracted it. Their resistance to whooping cough does not appear to be quite so high, for 146 children under six months had contracted this disease, and 228 developed it during the second six months. The number of children who contracted any one of the other zymotics during the first few months of life was much smaller. The congestion of the area and the social conditions in the houses preclude the theory that their escape may be attributed to increased care and segregation of the very young. More

likely it is a true immunity which very young children enjoy—probably in the value of a passive immunity derived from the mother, and like artificially induced passive immunities is short lived and fades gradually with age.

### TUBERCULOSIS.

The following table (compiled from weekly returns forwarded from the Health Department) shows the incidence of notified tuberculosis on different parts of the body in children of school age.

TUBERCULOSIS (ALL FORMS), 1923.

Ages.	Pulmonary.	Tubercular Meningitis.	Peritoneum and Intestines	Spinal Column.	Joints.	Other Organs.	Disseminated.
	Cases Notified.	Cases Notified.	Cases Notified.	Cases Notified.	Cases Notified.	Cases Notified.	Cases Notified.
0	2	6	11	18	6	5	1
1	6	13	8	9	16	4	1
2	10	4	7	12	5	4	7
3	2	3	3	5	5	1	—
4	8	1	5	6	6	—	3
5-9	116	8	3	8	19	3	24
10-14	104	16	3	5	9	3	25
Total ...	248	51	40	63	66	20	14

Dr. Dixon, Chief Tuberculosis Officer, has supplied the following information concerning children of school age who have been under observation :—

“ During the year 1923, children to the number of 243 were treated in the Yardley Road Sanatorium; of these 125 were males and 118 were females.

“ Of this number, 137 were admitted primarily for the purpose of observation, and 85 were discharged with no definite signs of active tuberculosis.

“ There were 158 who remained for treatment; 47 of them were in Stage I.\* (Turban Gerhardt), 52 were in Stage II., 48 were in Stage III., and 11 had quiescent pulmonary lesions associated with active surgical tuberculosis.

“ The average length of time spent by those children who remained in the Sanatorium for treatment was 206 days.”

\* The four degrees in the Turban Gerhardt classification of pulmonary tuberculosis infection are as follows :—

STAGE I.—Comprises those with disease of slight severity limited to small areas on either side, which in the case of affection of both apices does not extend below the scapular spine or clavicle, or in the case of an affection of the apex of one lung, does not extend below the second rib in front.

STAGE II.—Comprises those with disease of slight severity more extensive than stage I., affecting at most the whole of one lung, or severe disease extending at most to the half of one lung.

STAGE III.—All cases of greater severity than stage II., and all those with considerable cavities.

STAGE IV.—Includes those cases where no disease can be found or where the lesion is definitely proved to be obsolete.

## DEATHS IN CHILDREN OF SCHOOL AGE.

Rheumatic infections still take a heavy toll of child life. A Committee has been recently established to investigate the cause and distribution of these infective processes throughout England. This may be able to throw a new light upon the problem.

CAUSES OF DEATH. CHILDREN 5—15.	1917	1918	1919	1920	1921	1922	1923
Measles ... ... ...	19	8	24	19	11	5	13
Scarlet Fever ... ...	4	7	24	40	16	11	18
Whooping Cough ... ...	6	10	3	8	5	7	0
Diphtheria ... ...	41	87	63	95	64	49	60
Influenza ... ...	3	223	42	25	2	6	6
Pulmonary Tuberculosis ...	33	52	31	26	25	22	24
Tuberculosis Meningitis ...	24	20	19	9	15	15	13
,, Peritonitis and Intestines	15	9	16	5	6	7	6
Other Tuberculous Diseases ...	17	21	17	17	7	7	12
Rheumatic Fever ... ...	10	10	9	17	8	15	13
Cerebro-Spinal Fever ...	6	4	2	3	0	3	0
Meningitis... ... ...	14	20	13	11	13	6	10
Organic Diseases of the Heart ...	20	27	28	21	23	22	19
Bronchitis... ... ...	8	10	11	5	3	4	5
Pneumonia ... ...	28	91	56	49	46	36	31
Appendicitis ... ...	20	16	25	20	20	15	13
Accidental Burning ... ...	21	18	10	10	6	1	5
Accidental Drowning ... ...	11	10	11	13	5	3	7
Other Accidents ... ...	23	29	23	20	18	20	20
All Other Causes...	80	86	98	109	81	82	94
<b>TOTAL ... ...</b>	<b>403</b>	<b>758</b>	<b>525</b>	<b>522</b>	<b>374</b>	<b>336</b>	<b>369</b>

The approximate number of persons in the City in the age-group 5—15 years for 1923 has been calculated for statistical purposes to be 178,859. This agrees very closely with the figure given in the 1921 Census Report, viz., 178,047. The approximate death rate for the period 5—10 years in 1923 was 2·1 per 1,000, and that for the period 10—15 years was 1·7. These compare favourably with the approximate death rates of previous years.

The number of children on the registers of the Elementary Schools at the 31st December, 1923, was 143,736.

## CHOREA.

Dr. Marion Burt, Assistant School Medical Officer, has made an enquiry into the after history of a number of cases of Chorea which have come under her notice. In view of the tendency of recurrency and the frequent association with organic disease of the heart and that congeries of symptoms known as "Acute Rheumatism," these results are very interesting. A similar investigation, carried out by Dr. Moffett, was included in my annual report for 1920 (pages 25 and 26). The result of this enquiry, coupled with the fact that 261 children were found to be suffering from Chorea in the course of medical inspection, gives strength to the appeal for special provision for these cases (see Table II. of Appendix).

" During the years 1921, 1922 and 1923, there have been 91 children found to be in a choreic condition. Of these, 74 have recently been re-examined by me, and their progress investigated in some detail, with the following results :—

Cases where symptoms were well-marked ('Chorea')	23
Cases of a milder type ('Minor Chorea,' the 'Latent Chorea' of Reginald Miller) ... ... ...	51

" The following points may be worthy of note :—

The age ranges from 6 to 13 years (one of 16 included).

The mentality—they are in most cases intelligent, but belong to the so-called 'unstable' types.

" *Group I.—Those suffering from well-marked Chorea.*

*Sex*—Males 11; females 12.

*Onset*—Followed infective illnesses in 4 cases. No case determined by shock.

*Rheumatism*—Acute, definite history in 3 cases; rheumatic pains in 14.

*Heart*—In 9 cases some abnormal state was found, but no case of severe heart disease.

*Tonsils*—In 3 cases these were removed prior to the condition; in 2 subsequently with no benefit. In 2 cases they were enlarged and inflamed, but there was no case of hypertrophy.

*Present Condition*—Two only appear to be in normally good health, one of whom received rest and open-air treatment over four months with excellent results; 17 are in delicate health; 4 are greatly improved.

*Average number of weeks absent from school in last 2 years*—41.3.

" *Group II.—Suffering from Minor Chorea.*

*Sex*—Males 23; females 28.

*Onset*—Followed infective illnesses in 8 cases and debilitated conditions in 6 cases; possibly connected with shock or fright in 7 cases.

*Rheumatism*—Acute (definite history), 2 cases; rheumatic pains, 39 cases.

*Heart*—In 11 cases some abnormal condition was found, but no case of severe heart disease.

*Tonsils*—In 12 instances removed, 8 being prior to the complaint. Only 1 parent reports definite improvement of health following removal. There was no case of hypertrophy. (Three showed persistent chronic catarrh of severe degree.)

*Present Condition*—12 children appear to be in reasonably good health, but are unstable mentally and physically; 38, however, are in an unsatisfactory condition and need special care for a considerable period.

*Average number of weeks absent from school in last 2 years*—29.

*"Remarks."*

"None of the children appear to have been robust, but were poorly nourished and of rheumatic or anaemic tendencies. The mothers have in many cases been observed to be neurasthenic or delicate.

"Shock (accident, operation, etc.), though apt to be overstressed by parents, seems to be a definite ætiological factor in minor cases. The effect of debilitating illnesses is particularly noticeable.

*"Sequel of Various Methods of Treatment."*

1. Out-patient treatment at the various hospitals or dispensaries gave unsatisfactory results, as also did—
2. Treatment in the homes, unless the latter were of an exceptional type in which a calm disciplined atmosphere prevailed, together with the means for treatment by prolonged rest.
3. In-patient treatment in hospitals or infirmaries where there was a prolonged stay, the patient being kept in bed, gave good immediate results, but relapse was noticed in several cases shortly after resuming an ordinary regime.
4. Short stays in country or convalescent homes (one month) gave ineffectual improvement with frequent subsequent relapse.
5. In three cases where prolonged rest and open-air treatment were obtainable the results have been very encouraging; a severe case resulted in a complete cure in four months, and there has been no relapse up to the present.
6. Experience would seem to show that there is in these cases an inherent temperamental and physical instability which demands prolonged rest and open-air treatment, and a very gradual return to conditions of ordinary life, which must be one of limited mental and physical strain."

#### AFTER CARE AND CHOICE OF EMPLOYMENT.

The closest co-operation has continued to exist between the School Medical Service and the Juvenile Employment and Welfare Department. It will be remembered that an arrangement exists whereby information concerning all children in the Elementary Schools obtained at medical inspection during the 12—14 period is given on the Head Teachers' report cards used for after-care purposes. In addition, the Juvenile Employment Department have referred to the Medical Department numerous cases of children over 14 where special attention or advice appeared necessary. These children have been examined by the School Medical Officer, or one of the Assistant Medical Officers, and advice has been given as to necessary treatment for defects or ailments, or suggestions have been made as to employment for which the children are fitted. The Certifying Factory Surgeons have rendered considerable assistance by reporting to the Juvenile Employment Department children in need of treatment or who have commenced work which is considered unsuitable. As the Education Committee will, on April 1st, become responsible for the whole of the work of choice of employment, including the administration of Unemployment Insurance, it would appear that the co-operation between the two Departments will in the future become even more important.

In connection with the Schools for Unemployed Youths and Girls, arrangements were made for a number of these young persons to be medically inspected, and the results compared with those of young persons of comparable age attending Secondary Schools. In the case of the girls, the numbers are too small to afford any basis for more than a general impression, but in point of physique the girls in the Unemployment School compare very favourably. A larger number of the boys were examined, and upon these Dr. Morley submitted the following report :—

“ Sixty-eight boys were examined whose ages ranged from 15 to 18, but the great majority (54) were 17. They all had at one time or another been engaged in some form of occupation, many of them had had three or four places. Most had become unemployed on account of the great trade depression obtaining at present; enquiry, however, made it clear that many had fallen out of employment on account of the fact that their advancing age called for a larger wage than the employer wished to give, their places no doubt being taken by boys fresh from school.

“ (1) *Clothing and Cleanliness.*

“ The clothing, though in most cases in bad condition, was usually sufficient, but cleanliness was not a marked feature. None, however, showed any obvious verminous condition.

“ (2) *General Health and Condition.*

“ The general health of the boys appeared quite good, and, as will be shown later, their condition was but little below a healthy average. As at this age one might expect to find signs or symptoms of commencing tubercle of lung, I made a special point of examining for this condition, but in no case was there a suggestive history, nor did I find any signs pointing to the presence of this disease, though more than one had been labelled ‘ Consumptive ’ as younger children.

“ (3) *Special Senses.*

“ In six or seven cases there was dullness of hearing from previous Otorrhœa. In some cases the Otorrhœa was still recurrent from time to time. One boy was very deaf.

“ About two were still wearing glasses; four or five had worn glasses previously. As would be expected, the former were the cases of Myopia.

“ (4) *Weight and Height.*

“ As 54 of the boys were in their eighteenth year, I calculated the average weight and height of these, and give them below, in comparison with the average weight and height of boys of a similar age who have attended the Central Secondary School. As one would expect, a definite advantage is held by the latter boys.

	Average Height	Average Weight
54 Unemployment School Boys	... 5ft. 7ins. ...	8st. 8lbs.
Central Secondary Boys	... 5ft. 8ins. ...	9st. 0lbs.

“ The number taken is, of course, quite small, and in the case of the weights, the standard deviation is as large as 16·7lbs. Several showed a condition of definite flat-foot, while others showed the early stages of this condition.”

## RESEARCH.

*Dietetic Value of Milk.*

In my report for 1922 an outline was given of an experiment on the nutritional value of an extra milk ration, then being carried out. As the experiment attracted a good deal of attention throughout the country the results are here given in some detail. A longer and more full report is published in the "Proceedings of the Royal Sanitary Institute" (Vol. XLIV., Dec., 1923).

Although primarily intended as a practical demonstration and necessarily of a limited character, the experiment afforded an opportunity to test with as much scientific accuracy as the conditions allowed, the results of a daily milk ration over and above the ordinary food, in debilitated children. A scheme was drawn up whereby 30 children (*i.e.*, 15 boys and 15 girls) chosen on the ground of general malnutrition should receive an extra ration of one pint of milk daily (Sundays excepted) over a period of four months. An equal number of normal or average children of the same ages and sex were selected for comparison as "controls." These children, however, after the end of the first two months also received the milk. Thus for the first two months thirty children, and for the second two months sixty children, received the milk ration. Measurements of height and weight were taken every fourteen days, while the percentage of haemoglobin was estimated by a Von Fleischl's Haemometer. Lastly, a final examination of all the children was made one month after the experiment had ceased. It was thus possible to follow the progress of each child during the receipt of the milk and to note any difference which might ensue from a cessation of the milk ration. The actual conduct of the experiment was carried out by Dr. J. R. Mitchell, M.C., from November, 1922, to March, 1923.

Allcock Street School, which was chosen for the experiment, is situate in what may be termed a typical "slum area," which has suffered severely in the recent and continued slackness of trade and unemployment. The area is, moreover, largely occupied by factories and industrial undertakings of all kinds between which the small houses and mean tenements are wedged with irregularly disposed narrow streets, court-yards and back-to-back houses. The families from which the "poorly nourished" children were taken were, on the average, larger than those of which the "controls" were members. This, of course, has in most cases a double effect. Food, per head, is less plentiful and overcrowding becomes more serious. A large proportion of the houses occupied by these families is a three-apartment type which allows two bedrooms for anything up to ten or even more occupants. It was also noticed that in the families of the "poorly nourished" there had been a higher number of infantile deaths than in the families of the "controls." In some instances the child showing malnutrition was stated to have been born a weakling; in others it was reported that this particular child had been weakly since some illness, such as diphtheria. Doubtless such children suffer earliest and most severely as a result of shortage of food. In one family the older members were reported fairly healthy but two younger ones showed marked rickets. Jansen\* maintains that a typical feature of feeble growth in a family is this increase of disability in successive members; general malnutrition in the older children and actual rickets in the younger.

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\* Jansen. Murk. "Feebleness of Growth and Congenital Dwarfism."

In order to exclude extraneous influences and to secure a degree of uniformity of experimental conditions, an equal number of children of both sexes was chosen between the age of 7 and 11 years. After the age of 11 the normal growth, especially that of girls, begins to be accelerated, a fact which would have introduced errors into the physical factors which were under observation. Moreover, it was necessary for the same reason to secure for the experiment children who were not already in receipt of school meals. For the purpose of the investigation it was necessary that the children chosen should be, as far as possible, those suffering from malnutrition alone, and not the subjects of any active disease.

To provide a standard for comparison, an equal number of children of both sexes was selected from among those who presented no signs of malnutrition. These children were subjected to an examination precisely similar to that employed in selecting the poorly nourished, and were designed to serve as "controls" in the experiment. They are in the same age group as the "poorly nourished" and live under the same conditions as to general environment.

The head teachers of the departments concerned were asked to choose about twenty children each from those of their scholars who seemed to them to be poorly nourished, and particularly those who appeared to be making poor progress in their school work in consequence of this deficiency. These children were then examined and those excluded who gave evidence of active disease. The presence of carious teeth was not considered a ground for exclusion unless the mouth was septic, nor did anaemia cause rejection when this condition was not traceable to any underlying disease.

The final selection was made of those children who showed the greatest deficiency in weight combined with a low percentage of haemoglobin.

There were then two classes of children, each comprising fifteen boys and fifteen girls, both classes being in the same age-group. They are referred to as "poorly nourished" and "controls" respectively.

The milk, from a specially selected herd, was delivered at the school by the Birmingham Dairy Co., Ltd., twice daily in half-pint sealed bottles. When required a small hole was made through the seal and the milk drunk through a clean straw. Messrs. Hughes & Co., Ltd., generously supplied a sufficient number of Hovis biscuits for each child to have two with each bottle of milk, and as a solatium to the "controls" during the first two months. The biscuit taken with the milk has the advantage that by mingling with the milk in the stomach it prevents the formation of massive curd. Their rough texture makes the Hovis biscuits particularly useful in this respect.

The milk and biscuits were consumed at 10.15 a.m. and 3.15 p.m. All weighings, etc., were done at a uniform time of day and always before ingestion of the biscuits and milk. Experiment showed that the taking of this nourishment caused an immediate rise in weight of from 8 to 10 ounces, and this increase was not appreciably less at the end of half an hour. There was no issue of milk on Saturday afternoons, but Mr. Smith, the Head Master, Miss Fowler, Chief Assistant, and the Head Mistress, Miss Shackleton, took it in turns to attend at the school on Saturday mornings to supervise the distribution of the nourishment, and by the kindness of the Rev. Mother Superior of the Hostel of St. Brigid, Derrid, the regular distribution was maintained throughout the Christmas holidays.

The teachers of the children kept them under special observation in school, and soon were able to report perceptible improvement in those who were receiving milk. The children were notably brighter and more lively, and their school work improved, as they seemed less easily fatigued and their concentration was better. The mothers reported general improvement in spirits.

The following measurements were taken in accordance with Professor Dreyer's directions in his "Assessment of Physical Fitness."

Trunk height ... in upright sitting position on the floor.

Circumference of chest at level of fourth intercostal space in the nipple line during easy respiration.

Weight of body ... unclad, a towel of known weight being used as a screen.

Dreyer's tables give :—

(a) a normal weight corresponding to trunk height;

(b) a normal weight corresponding to actual circumference of chest.

Dreyer takes the average of these two weights as a calculated normal weight for the individual concerned, and expresses as a percentage of it the variation of the actual weight from this normal. The value of the trunk height in preference to the total height as an index of development and nutrition is now generally recognised, and throughout this experiment Dreyer's methods were employed.

The measurements of the trunk height and the weight have also the advantage that they can be used to give a concrete picture of the nutrition of the children and of any changes which might take place during the experiment by the calculation of the so-called "Pelidisi" factor which has been worked out for each child. This factor, introduced by Professor Pirquet in Vienna, has been employed throughout Austria in the feeding of children by the various agencies since the war.

The formula is—

$$\sqrt[3]{\frac{\text{Weight} \times 10}{\text{Sitting height}}}$$

The weight is expressed in grams and the height in centimetres.

The lower limit for nutrition in school children is a pelidisi factor of 94.5, and a child giving a pelidisi below this figure is under-nourished. The normal may be taken at 98. A decreasing pelidisi implies an increasing degree of under-nourishment. Of the children chosen for the milk, only two boys and three girls had a pelidisi above 94.5. At the end of the four months eight boys and seven girls had passed this lower limit, and in the case of one boy and one girl only did the factor remain stationary.

#### *Condition of the Children at the Beginning of the Experiment.*

Calculated according to Dreyer's tables, the condition was as follows :—

Boys (poorly nourished) ...	Average defect per cent. in weight	6.28
Boys (controls) ... ...	Average excess per cent. in weight	1.45
Girls (poorly nourished) ...	Average defect per cent. in weight	8.46
Girls (controls) ... ...	Average defect per cent. in weight	1.14

Dreyer estimates that a percentage of 5, 10, or 15, above or below the calculated normal, indicates a weight, possibly, probably, or certainly, abnormal, respectively. So reckoned, all the children concerned come within the range of possible abnormality, and here is seen the value of the haemoglobin estimation.

*Condition at the End of the First Two months.*

Average increase in weight :—

Boys (poorly nourished)	...	...	...	1.26-lbs.
Boys (controls)	...	...	...	0.28-lbs.
Girls (poorly nourished)	...	...	...	2.53-lbs.
Girls (controls)	...	...	...	1.76-lbs.

*Condition at the End of the Second Two Months.*

Average increase in weight (during second two months) :—

Boys (poorly nourished)	...	...	...	1.13-lbs.
Boys (controls)	...	...	...	1.83-lbs.
Girls (poorly nourished)	...	...	...	0.98-lbs.
Girls (controls)	...	...	...	1.16-lbs.

An examination of the children was made one month after the issue of milk had been discontinued when it was found that there was a general slight loss in weight.

Average loss in weight one month after stopping milk :—

Boys (poorly nourished)	...	...	...	0.22-lbs.
Boys (controls)	...	...	...	0.09-lbs.
Girls (poorly nourished)	...	...	...	0.18-lbs.
Girls (controls)	...	...	...	0.09-lbs.

It will be remembered that during the first two months the "controls" received no issue of milk. In this period, therefore, it is possible to contrast the increase in weight of normal children with the rate of increase of the poorly-nourished children when assisted by additional milk. During the second period, when all the children received milk, comparison may be made under three heads :—

- (1) Comparison of the rates of progress of the "poorly-nourished" during the two periods.
- (2) Comparison of the progress of the two classes of children during the second period, when both were receiving milk.
- (3) Comparison of the rates of progress of the "controls" during the two periods, *i.e.*, the effect which extra milk produced on normal children.

The same lines of investigation would hold for the percentage of haemoglobin.

Referring to the figures given above, it will be seen that during the first two months the increase in weight of the "poorly nourished" assisted by the milk was considerably greater than that of the "controls." This rate of gain became less in the second two months, the fall being more marked in the girls than in the boys. The "control" boys made great increase during their milk-drinking two months, but the "control" girls gained less than in the first period. They still, however, showed greater increase than did the "poorly-nourished" girls in the same period.

In considering the result of the experiment it is necessary to bear in mind the seasonal variation in growth. In the winter months the weekly increase in weight has been estimated to be only about one-half that observed in the summer months, and there is a similar but less well-defined seasonal variation in the haemoglobin content.

At the beginning of the experiment the average percentage of haemoglobin in each class was as under:—

Boys (poorly nourished) ...	...	...	...	61.06
Boys (controls) ...	...	...	...	79.06
Girls (poorly nourished) ...	...	...	...	57.53
Girls (controls) ...	...	...	...	76.93

The normal percentage of haemoglobin in children is stated by Hutchison to be about 87. It will be noted that in both groups the figure for girls is lower than that for boys. This is probably no more than coincidence, since the sex inequality noted in later life has not so far been observed at eleven years of age.

Average increase in percentage of haemoglobin at the end of the first two months:—

Boys (poorly nourished) ...	...	...	...	9.34
Boys (controls) ...	...	...	...	0.14
Girls (poorly nourished) ...	...	...	...	7.53
Girls (controls) ...	...	...	...	2.67

Average increase in percentage of haemoglobin during the second two months:—

Boys (poorly nourished) ...	...	...	...	2.81
Boys (controls) ...	...	...	...	0.26
Girls (poorly nourished) ...	...	...	...	4.54
Girls (controls) ...	...	...	...	3.54

The figures for haemoglobin present some interesting points. The "poorly nourished" boys made a large gain during the first period, but much less in the second, while the gain in weight was not greatly altered. The "control" boys, on the other hand, varied little in haemoglobin in the two periods, although the increase in weight was marked in the second two months. It might be concluded that these individuals had no arrears of haemoglobin to make up.

In the case of the girls, increase in haemoglobin was more equal in the two periods so far as the "poorly nourished" are concerned, although in the later period the increase in weight was much less. The greater gain in haemoglobin seems here to be associated with a lower gain in weight. If this be so, it would explain the figures in the case of the "control" girls. Here, during their milk-drinking period, their gain in weight was less than in the previous two months, but their increase in haemoglobin was much greater.

Taking the whole four months, the rate of increase in both weight and haemoglobin is practically identical for boys and girls of the "poorly nourished" category. These children taking the extra milk for four months have increased in weight only a little less than normal children who had the milk for two months, while their increase in haemoglobin has been very much greater.

How far these figures are due to intrinsic differences in sex metabolism cannot be determined, owing to the small numbers of children concerned, but they appear to be significant especially if expressed in another way, as in the following table:—

Increase in Average Hæmoglobin percentage.	"Poorly Nourished."		"Controls."	
	Boys.	Girls.	Boys.	Girls.
Average percentage at :				
(a) Beginning of Experiment	... 61	57·5	79	77
(b) End of 2 months	... 70	65·1	80·2	77·6
(c) End of 4 months	... 73·2	69·6	80·5	77·8
(a) End of 2 months	... 9·3	7·5	0·8	0·9
(b) End of 4 months	... 11·7	12·5	1·4	1·0

Thus the total increase in the boys represents an increase in the percentage of haemoglobin equal to 20 per cent., while in the girls the percentage of increase was 21 per cent.

It must be remembered in this connection that the estimation of Fleischl's Hæmometer is in percentages and by a colour test. The personal error may, therefore, be comparatively large and liable to variation when carried out over a period of four months, from physiological or psychological variability in the examiner. In order to reduce this personal error the preliminary estimations were carried out twice for each child with an interval between them. Bearing this in mind, we must admit that it is possible that the very small differences found in the "controls" may fall within the limits of experimental error. Such an admission, however, will only serve to throw into stronger relief the marked changes in the haemoglobin percentage of the "poorly nourished" children. At the final examination one month after the cessation of the experiment the haemoglobin showed a slight change only, there being a small diminution in the percentage in all classes except the "control" boys, where there was a slight increase.

Percentage of haemoglobin one month after cessation of experiment :

Boys (controls) ... ...	Average increase	0.37
Boys (poorly nourished) ... ...	Average loss	0.09
Girls (poorly nourished) ... ...	Average loss	0.46
Girls (controls) ... ...	Average loss	0.56

Both teachers and parents reported a diminution in the brightness and spirits of the children concerned.

The average increase in the pelidisi figure was as follows :—

	First two months.	Second two months.	Total.
Boys (poorly nourished) ...	1.00	0.86	1.86
Boys (controls) ...	0.33	0.67	1.00
Girls (poorly nourished) ...	1.46	0.34	1.80
Girls (controls) ...	0.86	0.74	1.60

*Nutritive Value of the Milk Ration.*

Professor Von Pirquet, of Vienna, has recently introduced a system of estimating the value of various food stuffs, which can be used in place of the caloric estimation. This is the so-called NEM system, whereby the nutritive value of foods is expressed in terms of the corresponding value of pure milk. One litre, *i.e.*, 1,000 grammes, of pure milk contains 1,000 NEM, or 100 Hectonem. Hence a pint of pure milk will contain 568 Nem or 5.68 Hectonem. According to Von Pirquet the daily food requirements of a child of the age seven to eleven is 30 Hectonem. Thus the pint of milk given to the children represents an addition to their diet of one-fifth of their total daily requirements. If we express this in terms of calories we get comparable results. The number of calories required daily by children between these stated ages may be said to average 2,400 calories. The caloric value of milk is very variously given by different authors, but if we take Von Pirquet's estimate of 667 calories per litre we obtain the figure 378.8 calories per pint—a figure which is identical with that given by Hamill.\* The amount in the milk ration is thus equal to one-sixth of a child's caloric requirements. The results are thus comparable within the limits of the variations of the different values assigned by different observers. Granting that the usual daily mixed diet of these children in their homes, consisting largely of carbohydrates with a very small proportion of milk and butter and an almost complete absence of green vegetables, exhibits a general nutritive deficiency, it is easy to understand the improvement seen in this experiment. The extra milk ration with its high calcium and vitamine content converts the inadequacy of their home diet into one which is adequate for their needs. During the period of growth the chief value of a milk diet probably depends upon the fact that it corrects the calcium deficiency upon which the growth of the bones depends to a very considerable extent. Conversely, "weights show very markedly the relationship between physique and food. When the weight is much below the average for that age, almost without exception the diet is inadequate."§

\* "Diet in Relation to Normal Nutrition" Ministry of Health, 1921.  
§ Lindsay. Study of diets in Glasgow, page 30.

### *Conclusions.*

The first and most noticeable result of the extra ration was a clear improvement in bodily and mental vigour. Both parents and teachers are quite definite on this point, and their testimony is worthy of consideration. This may with considerable probability be correlated with the rapid increase in the haemoglobin content of the blood. As the oxygen-carrier to the tissues the haemoglobin may be not unfancifully termed "the vitality component." An increase in the percentage of haemoglobin amounting to 20 per cent. in the poorly-nourished children can hardly fail to produce an increased metabolism, which is likely to show itself in increased vigour and a subjective feeling of improved well-being. The increase in weight did not show itself until later when the increase in haemoglobin content appeared to have slowed down. How far this is a valid deduction from the experiment it is not possible to assert owing to the smallness of the figures, though the observation is interesting. The increase in the pelidisi factor, as it is a figure based upon the relation between the weight of the body and height of the trunk, is of real value and importance, but the results are not a little complicated from the fact that the controls themselves, before they became partakers of the milk, showed an increase. This, however, averages out, as can be seen from the tables, as less than that of the recipients of the milk.

In conclusion, interesting as are the above results, the subject is too complex and the numbers involved in the experiment are too small for any strictly scientific deductions to be drawn therefrom. As a practical exposition of the value of the addition of an extra milk ration to the dietary of debilitated children, it has proved highly successful. But much further knowledge of the factors which govern the growth and nutrition of children is required, and an experiment on a much more extended scale is necessary before the results can be submitted to those strict canons of scientific measurement which are essential before valid deductions can be made which will satisfy statistical laws.

### SCABIES.

The diminished incidence of Scabies amongst the children noted in previous years has been continuous, and the number treated at the baths during the year was 307, as compared with 452 in 1922 and 675 in 1921. The number of re-infected cases, *i.e.*, children who had been treated and cured but who were found on subsequent examination to be re-infected either from their infected clothing or from other inmates in the house, was only 25. In addition to these, 273 children received treatment for generalised Impetigo, making a total of 580 children treated at the Centres.

A total of 7,372 baths were given, and the average duration of treatment between the first and last baths was eleven days.

## VERMINOUS CONDITIONS.

A larger number of examinations has been made than in any previous year, with a smaller percentage of children found to be infected. Since 1909, when this examination was first instituted, there has been a reduction in the percentage by 20 per cent. (from 49.5 to 29.5 per cent). This is a highly satisfactory achievement, as it affords evidence of a rising standard of personal cleanliness, which is further reflected in the general improvement of the quality of the clothing which is noticeable despite the present stress of poverty and unemployment.

Year.	No. of Examinations.	Ova.		Vermin.		Clean.	
		No.	%	No.	%	No.	%
1917	126,017	46,289	36.73	7,051	5.59	72,677	57.66
				42.32%			
1918	104,994	34,229	32.60	5,597	5.33	65,168	62.06
				37.9%			
1919	130,513	40,037	30.67	5,880	4.5	84,596	64.81
				35.1%			
1920	205,300	63,556	30.95	10,304	5.01	131,366	63.98
				35.9%			
1921	226,129	74,723	33.04	9,640	4.26	141,766	62.69
				37.3%			
1922	237,376	66,945	28.2	8,648	3.64	161,783	68.12
				31.84%			
1923	245,704	64,976	26.28	8,096	3.29	172,632	70.26
				29.57%			

There is a certain small proportion of persistently verminous families which keeps up the incidence of the condition in the school. During the year there were 149 prosecutions of parents in respect of verminous conditions. Legal action is only taken as a last resource.

CITY OF BIRMINGHAM.

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EDUCATION COMMITTEE.

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## Appendix to Annual Report

... of ..

### School Medical Officer

*for the year ended 31st December, 1923.*

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### OFFICIAL TABLES.

## ELEMENTARY SCHOOLS.

TABLE I.—NO. OF CHILDREN INSPECTED 1ST JANUARY, 1923,  
TO 31ST DECEMBER, 1923.

A.—ROUTINE MEDICAL INSPECTION.

Age.	Entrants.						Total.
	3	4	5	6	Other Ages.		
Boys ...	—	—	5,878	1,227	442	7,547	
Girls ...	—	—	6,044	1,296	453	7,793	
Totals ...	—	—	11,922	2,523	895	15,340	

Age.	Intermediate Group.	Leavers.			Other Ages.	Total.	Grand Total.
		8	12	13	14		
Boys ...	... 7,204	3,566	4,149	416	657	15,992	23,539
Girls ...	... 7,579	3,399	4,060	240	521	15,799	23,592
Totals ...	14,783	6,965	8,209	656	1,178	31,791	47,131

B.—SPECIAL INSPECTIONS.

	Special Cases.	Re-Examinations ( <i>i.e.</i> , No. of Children Re-examined).
Boys ...	14,445	9,412
Girls ...	16,303	10,858
Totals ...	30,748	20,270

C.—TOTAL NUMBER OF *Individual Children* INSPECTED BY THE MEDICAL OFFICER,  
WHETHER AS ROUTINE OR SPECIAL CASES (*no Child*  
*being counted more than once in one Year*).

No. of Individual Children inspected.
77,879

TABLE II.—RETURN OF DEFECTS FOUND IN THE COURSE OF MEDICAL INSPECTION IN 1923.

		Routine Inspections.		Specials.		
	Defect or Disease.	(1)	(2)	(3)	(4)	(5)
	Malnutrition ...	...	253	476	167	10
	Uncleanliness :					
	Head ...	...	995	932	1,440	631
	Body ...	...	685	829	194	197
Skin	Ringworm :					
	Head ...	...	63	17	729	59
	Body ...	...	35	6	505	16
	Scabies ...	...	64	13	438	50
	Impetigo ...	...	543	113	4,457	355
Eye	Other Diseases (non-Tubercular) ...	...	427	195	3,039	271
	Defective Vision ...	...	2,992	1,447	2,389	407
Ear	Other Conditions ...	...	467	179	1,602	166
	Defective Hearing ...	...	678	164	650	81
Nose & Throat	Other Ear Diseases ...	...	594	151	1,125	95
	Enlarged Tonsils ...	...	617	1,138	656	123
	Adenoids ...	...	193	193	127	35
	Enlarged Tonsils and Adenoids ...	...	1,328	847	824	545
Defective Speech ...		...	80	140	17	12
Heart and Circulation.	Heart Disease :					
	Organic ...	...	136	157	69	45
	Functional ...	...	55	158	27	46
Lungs	Anæmia ...	...	693	81	486	154
	Bronchitis ...	...	355	109	326	63
Tuberculosis	Other Non-Tubercular Diseases ...	...	126	182	192	68
	Pulmonary :					
	Definite ...	...	4	5	15	2
	Suspected ...	...	48	82	91	17
	Non-Pulmonary :					
	Glands ...	...	27	19	122	26
	Other Bones and Joints ...	...	7	8	20	6
Nervous System	Other Forms ...	...	11	15	17	4
	Epilepsy ...	...	21	33	52	35
	Chorea ...	...	52	35	118	56
Deformities	Other Conditions ...	...	61	45	31	13
	Rickets ...	...	182	407	31	12
Other Defects and Diseases ...		...	1,325	691	7,954	2,547

NUMBER OF Individual Children HAVING DEFECTS WHICH REQUIRED TREATMENT OR TO BE KEPT UNDER OBSERVATION

42,287

TABLE III.—NUMERICAL RETURN OF ALL EXCEPTIONAL CHILDREN  
IN THE AREA IN 1923.

			Boys.	Girls.	Total
Blind. (including partially blind).		Attending Public Elementary Schools ... ... ... Attending Certified Schools for the Blind ... ... ... Not at School ... ... ...	— 94 5	1 74 7	1 168 12
Deaf and Dumb. (including partially deaf).		Attending Public Elementary Schools ... ... ... Attending Certified Schools for the Deaf ... ... ... Not at School ... ... ...	2 76 3	2 72 1	4 148 4
Mentally Deficient.	Feeble Minded.	Attending Public Elementary Schools ... ... ... Attending Certified Schools for Mentally Defective Children Notified to the Local M.D. Act Authority by Local Education Authority during the Year ... Not at School ... ... ...	18 624	24 522	42† 1146
	Imbeciles.	At School ... ... ... Not at School ... ... ... Notified to the Local M.D. Act Authority by Local Education Authority during the Year ...	— 98 15	— 82 13	— 180 28*
	Idiots.	Not at School ... ... ... Notified to the Local M.D. Act Authority by Local Education Authority during the Year ...	16 5	4 3	20 8*
Epileptics.		Attending Public Elementary Schools ... ... ... Attending Certified Schools for Epileptics ... ... ... Not at School ... ... ...	51 16 13	58 8 2	109 24 15
	Crippling due to Tuberculosis.	Attending Public Elementary Schools ... ... ... Attending Certified Schools for Physically Defective Children. Not at School ... ... ...	— 93 19	2 87 11	2 180 30
	Crippling due to causes other than Tuberculosis, i.e., Paralysis, Rickets, Traumatism.	Attending Public Elementary Schools ... ... ... Attending Certified Schools for Physically Defective Children. Not at School ... ... ...	1 125 55	4 111 42	5 236 97
Physically Defective.	Severe Heart Disease.	Attending Public Elementary Schools ... ... ... Attending Certified Schools for Physically Defective Children. Not at School ... ... ...	3 15 7	8 46 13	11 61 20
	Pulmonary Tuberculosis.	Attending Open-Air Schools ...	13	32	45
	Delicate and Debilitated.	Attending Open-Air Schools ...	58	85	143

† Certified as Mentally Defective and awaiting admission to Special Schools.  
There are in addition 146 boys and 167 girls awaiting examination who have been reported as probably mentally defective.

\* Included in the figures immediately preceding.

TABLE IV.—TREATMENT OF DEFECTS OF CHILDREN DURING 1923.

## A.—TREATMENT OF MINOR AILMENTS.

Disease or Defect.	Referred for Treatment.	Number of Children.		
		Treated.		
		Under Local Education Authority's Scheme.	Otherwise.	Total.
<b>Skin—</b>				
Ringworm-Head	792	1,068	—	1,068
Ringworm-Body	540	465	—	465
Scabies ... ...	502	416	—	416
Impetigo ... ...	5,000	4,736	—	4,736
Other skin disease ...	3,466	2,604	—	2,604
<b>Ear Disease</b> ... ...	1,719	1,264	—	1,264
<b>Eye Disease (external and other)</b> ... ...	2,069	1,902	—	1,902

## B.—TREATMENT OF VISUAL DEFECT.

Referred for Refrac- tion.	Number of Children.								
	Submitted to Refraction.				For whom Glasses were Pre- scribed.	For whom Glasses were Provided.	Recom- mended for Treat- ment other than by Glasses.	Received other Forms of Treat- ment.	
	Under Local Education Authority's Scheme, Clinic or Hospital.	By Private Practi- tioner or Hospital.	Other- wise.	Total.					
5,381	3,851	—	—	3,851	3,567	3,460	76	13	208

## C.—TREATMENT OF DEFECTS OF NOSE AND THROAT.

Referred for Treatment.	Number of Children.		
	Received Operative Treatment.		
	Under Local Education Authority's Scheme -Clinic or Hospital.	By Private Practitioner or Hospital	Total
3,745	1,418	—	1,418
			1264

## D.—TREATMENT OF DENTAL DEFECTS.

## 1. Number of Children dealt with.

	Age Groups.										"Specials"	Total.
	5	6	7	8	9	10	11	12	13	14		
(a) Inspected by dentist ...	8,473	10,204	11,805	5,515	12,866	207	—	3,084	—	—	485	54,639
(b) Referred for treatment ...					40,417						269	40,686
(c) Actually treated...					26,578						—	26,578
(d) Re - treated (result of periodical examination)					4,815						—	4,815

## 2. Particulars of Time given and of Operations undertaken.

No. of Half Days devoted to Inspection.	No. of Half Days devoted to Treatment.	Total No. of Attendances made by the Children at the Clinic.	No. of Permanent Teeth.		No. of Temporary Teeth.		Total No. of Fillings.	No. of Administrations of General Anæsthetics included in (4) and (6).	No. of other Operations.	Dressings.
			Ex- tracted.	Filled.	Ex- tracted.	Filled.				
(1.)	(2.)	(3.)	(4.)	(5.)	(6.)	(7.)	(8.)	(9.)	(10.)	
231	3,016	31,044	5,748	14,990	52,334	13 ,225	28,215	7,234	11,260	

## E.—TREATMENT OF UNCLEANLINESS.

See statement in body of Report, page .

## F.—TREATMENT OF ALL OTHER DEFECTS.

See statement in body of Report, page .

TABLE V.—SUMMARY OF TREATMENT OF DEFECTS AS SHOWN IN TABLE IV. (A, B, C, D AND F, BUT EXCLUDING E).

Disease or Defect.	Referred for Treatment.	Number of Children.		
		Treated.		
		Under Local Education Authority's Scheme.	Otherwise.	Total.
Minor Ailments ...	14,088	12,455	—	12,455
Visual Defects ...	5,381	3,851	—	3,851
Defects of nose and throat ...	3,745	2,682	—	2,682
Dental Defects ...	40,686	26,578	—	26,578
Total ...	63,900	45,566	—	45,566

TABLE VI.—SUMMARY RELATING TO CHILDREN MEDICALLY INSPECTED AT THE ROUTINE INSPECTIONS DURING THE YEAR 1923.

(1) The total number of children medically inspected at the routine inspections	... ... ... ...	47,131
(2) The number of children in (1) suffering from—		
Malnutrition	...	729
Skin Disease	...	1,476
Defective Vision (including Squint)	...	4,439
Eye Disease	...	646
Defective Hearing	...	842
Ear Disease	...	745
Nose and Throat Disease	...	4,316
Enlarged Cervical Glands (non-tubercular)	...	—
Defective Speech	...	220
Dental Disease	...	—
Heart Disease—		
Organic	...	293
Functional	...	213
Anaemia	...	774
Lung Disease (non-tubercular)	...	772
Tuberculosis—		
Pulmonary { definite ...	...	9
suspected	...	130
Non-pulmonary	...	87
Disease of the Nervous System	...	247
Deformities	...	817
Other defects and diseases	...	2,016
(3) The number of children in (1) suffering from defects (other than uncleanliness or defective clothing or footgear) who require to be kept under observation (but not referred for treatment)	... ... ... ...	7,476
(4) The number of children in (1) who were referred for treatment (excluding uncleanliness, defective clothing, etc.)	... ...	11,784
(5) The number of children who received treatment for one or more defects (excluding uncleanliness, defective clothing, etc.)		*18,702

\* This includes "Specials" as well as "Routine" cases.

## SECONDARY SCHOOLS

AND

### Other Institutions for Higher Education.

TABLE I.—No. OF CHILDREN INSPECTED 1ST JANUARY, 1923,  
TO 31ST DECEMBER, 1923.

A.—ROUTINE MEDICAL INSPECTION.

Age.	Entrants.					Other Ages.	Total.
	3	4	5	6			
Boys ... ...						37	37
Girls ... ...						270	270
Totals ... ...						307	307

Age.	Intermediate Group.	Leavers.			Other Ages.	Total.	Grand Total.
		8	12	13			
Boys ... ...	59	272	386	403	569	1,689	1,726
Girls ... ...	—	193	176	170	434	973	1,243
Totals ... ...	59	465	562	573	1,003	2,662	2,969

B.—SPECIAL INSPECTIONS.

	Special Cases.	Re-Examinations (i.e., No. of Children Re-examined).
Boys ... ...	90	28
Girls ... ...	21	114
Totals ... ...	111	142

C.—TOTAL NUMBER OF Individual Children INSPECTED BY THE MEDICAL OFFICER,  
WHETHER AS ROUTINE OR SPECIAL CASES (no Child  
being counted more than once in one Year).

No. of Individual Children Inspected.
3,080